



State of New Jersey

PHILIP MURPHY
Governor

DEPARTMENT OF ENVIRONMENTAL PROTECTION
Climate & Flood Resilience
Division of Coastal Engineering
1510 Hooper Ave; Suite 140
Toms River, N. J. 08753
Tel. 732-255-0767 Fax 732-255-0774

SHAWN LATOURETTE
Commissioner

SHEILA Y. OLIVER
Lt. Governor

Date: July 2, 2021

To: All Interested Bidders

Re: **Addendum # 2**
HIGBEE BEACH RESTORATION PROJECT
NJDEP DIVISION OF COASTAL ENGINEERING
PROJECT NUMBER 4299-20

This addendum is being issued the contract for the advertisement of the Higbee Beach Restoration Project, New Jersey as advertised on May 20, 2021.

The primary purpose of the Addendum, amongst other revisions, is to clarify some sections of the specifications and rectifying a measurement on Plan Sheet 42 regarding fencing and planting notes on Plan Sheet 110. All specification revisions have been documented in the Register of Specifications Changes attached herein.

Please note that security protocols have changed at 1510 Hooper Avenue, Toms River, NJ 08753. All bidders must enter through the main entrance located at the front of the building and check in at the security desk. A DCE staff member will be stationed at the security desk to receive all official submissions.

As a result of these changes, please be advised that the Bid Date for this project **shall be extended to Thursday, July 15, 2021 at 10:00 AM (prevailing time)**. Except as amended in Clarification No. 1, Addendum No. 1, and this Addendum No. 2, all other terms and conditions of the Project Plans and Specifications remain the same.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum shall supersede the Specifications, Project Plans, and previous addenda and are an essential part of the contract. Please note that a signed copy of the "Acknowledgement of Receipt of Changes to Bid Document Form" is attached and must accompany your bid submission to be deemed complete, indicating receipt of this addendum and any previous addenda or clarifications issued for this solicitation. Failure to include this and form in your bid package shall show cause for dismissal of said bid.



This addendum is being distributed to all current plan-holders via email only. If you fail to receive all twenty six (26) pages of this Addendum No. 2, please contact Sarah Bates at sarah.bates@dep.nj.gov. This addendum includes the following:

1. Addendum 1 Specifications Attachment – (24 pgs. In total)
 - a. Acknowledgement of Receipt Form - (1 pg.)
 - b. Revised Plan Sheet 42 – (1 pg.)
 - c. Revised Plan Sheet 110 – (1 pg.)
 - d. Revisions to Section 11 Specifications – (16 pgs.)
 - e. Register of Specification Changes – (1 pg.)

Sincerely,



William Dixon, Director
Division of Coastal Engineering
Climate & Flood Resilience



HIGBEE BEACH RESTORATION
ADDENDUM NO. 2
ACKNOWLEDGEMENT OF RECEIPT OF
CHANGES TO BID DOCUMENT FORM

ACKNOWLEDGMENT OF RECEIPT OF CHANGES TO BID DOCUMENT FORM

(Name of Local Contracting Unit)

(Name of Construction/Public Works Project)

(Project or Bid Number)

Pursuant to Section 3:08 – Addenda and Clarifications, the undersigned bidder hereby acknowledges receipt of the following notices, revisions, or addenda to the bid advertisement, specifications or bid documents. By indicating date of receipt, bidder acknowledges the submitted bid takes into account the provisions of the notice, revision or addendum. Note that the local unit's record of notice to bidders shall take precedence and that failure to include provisions of changes in a bid proposal may be subject for rejection of the bid.

Local Unit Reference Number Or Title of Addendum/Revision	How Received (mail, fax, Pick-up, etc.)	Date Received
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

☐ NO ADDENDA OR CLARIFICATION WAS RECEIVED

Acknowledgement by Bidder:

Name of Bidder: _____

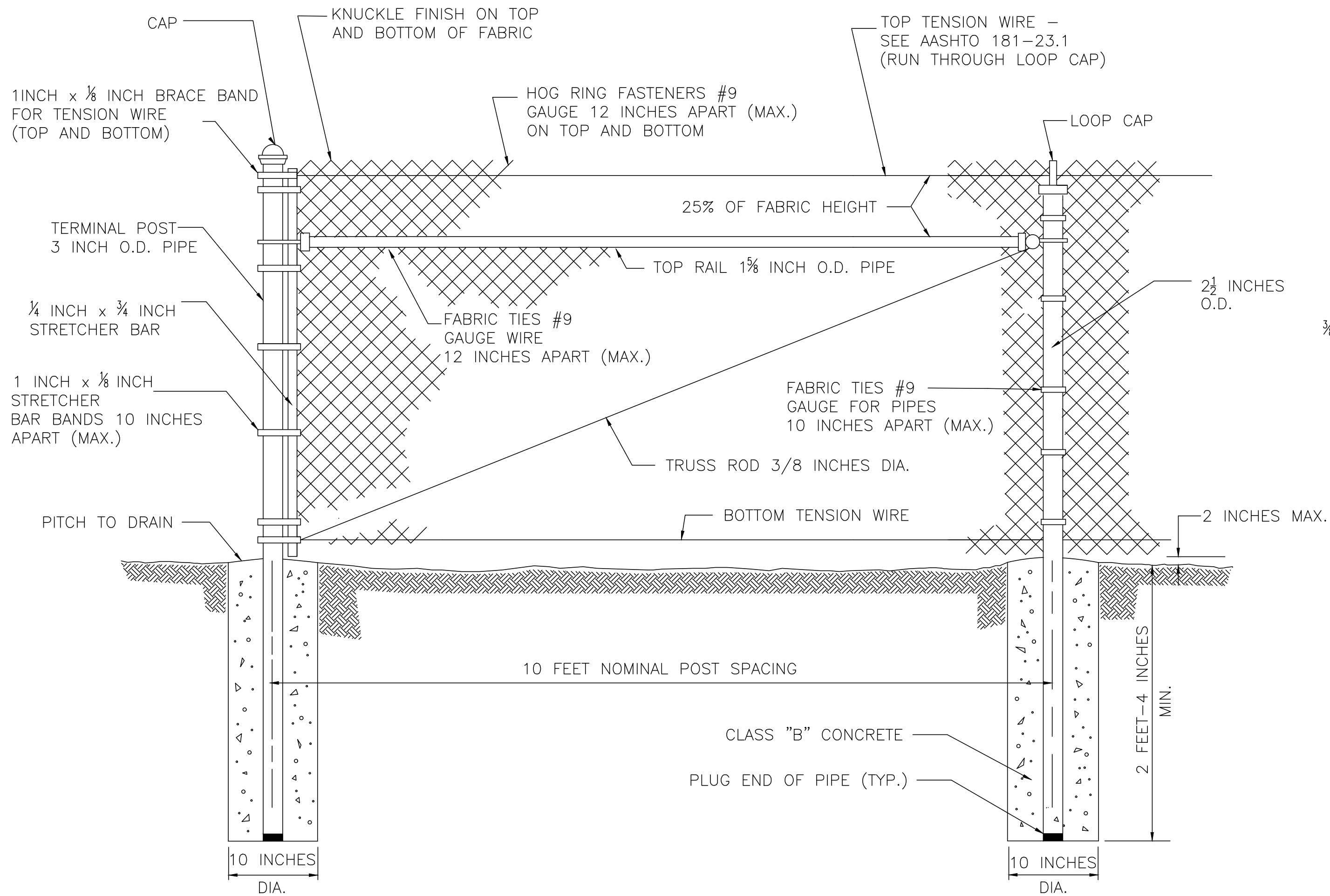
By Authorized Representative: _____

Signature: _____

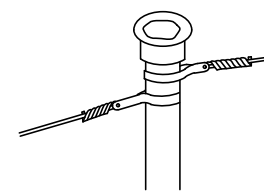
Printed Name and Title: _____

Date: _____

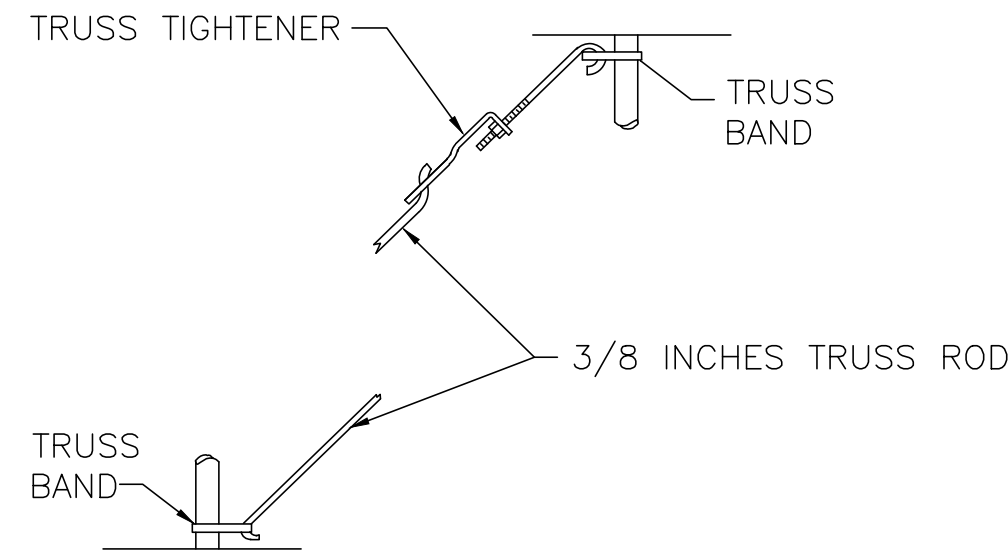
HIGBEE BEACH RESTORATION
ADDENDUM NO. 2
REVISED PLAN SHEETS NO. 42 AND NO. 110



TEMPORARY CHAIN-LINK FENCE, 8 FEET HIGH
N.T.S.

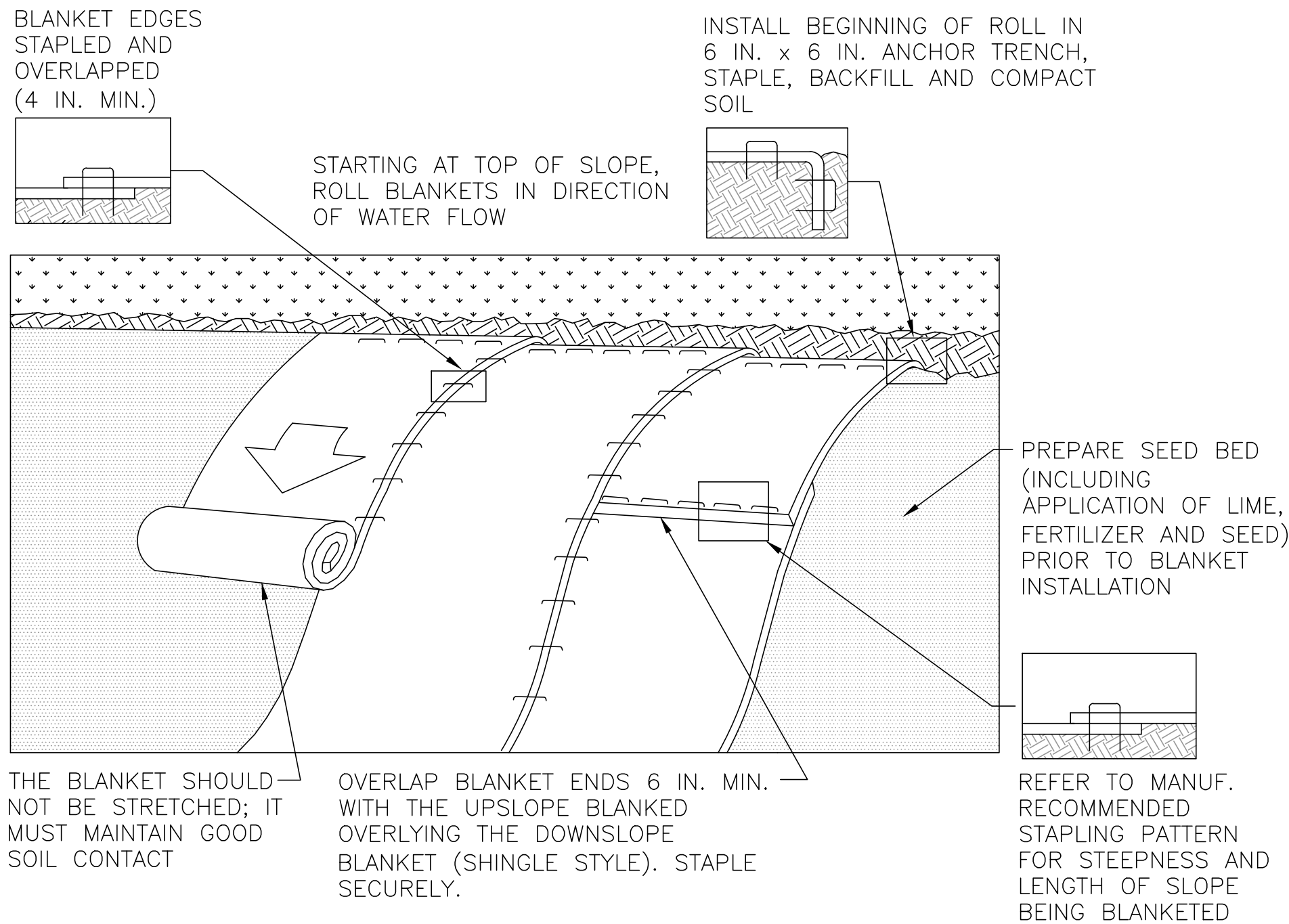


TENSION WIRE CONNECTION AT
ROUND INTERMEDIATE OR CORNER POST



3/8 INCHES TRUSS ROD ASSEMBLY

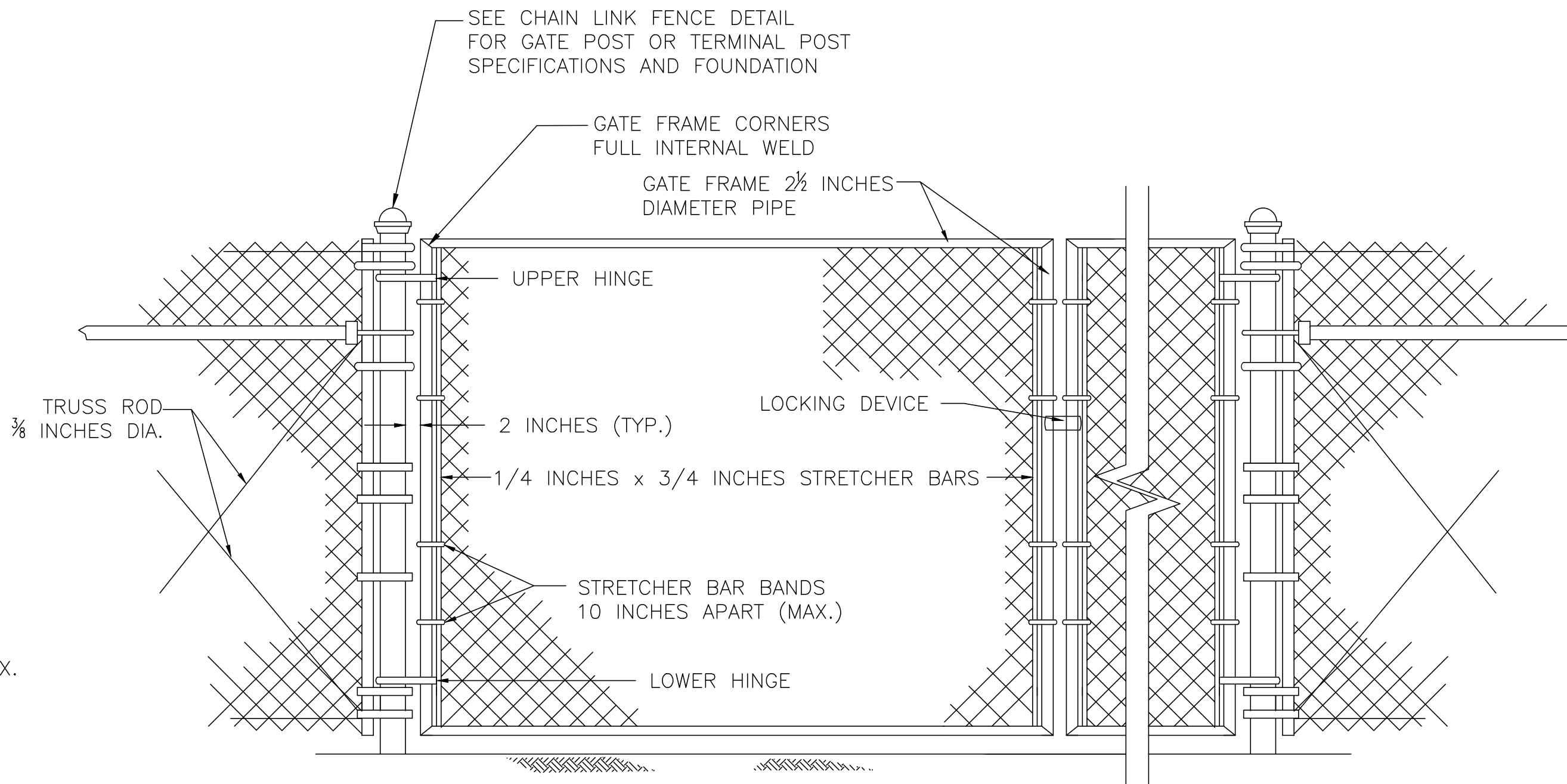
TEMPORARY CHAIN-LINK FENCE ASSEMBLIES
N.T.S.



EROSION CONTROL MATTING
N.T.S.
(IF AND WHERE REQUIRED)

NOTES:

1. THE EROSION CONTROL BLANKET SHALL BE THE NORTH AMERICAN GREEN S150 OR EQUIVALENT.
2. SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO SEED INSTALLATION DESCRIBED ON DRAWING NUMBER L202, OR AS APPROVED BY THE ENGINEER, PRIOR TO INSTALLING THE BLANKET.
3. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE.
4. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
5. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
6. THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
7. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA, WHERE SEEDING OCCURS IN ACCORDANCE WITH THE PLANS. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.
8. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT ON THE FORMER HARBISON WALKER MAGNESITE UNTIL CONSTRUCTION IS COMPLETED. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.



TEMPORARY CHAIN-LINK FENCE, 16 FOOT WIDE GATE, DOUBLE LEAF
N.T.S.

NOTE:

TEMPORARY CHAIN-LINK FENCE AND GATE DETAILS BASED ON NJDOT CONSTRUCTION DETAILS STANDARD DRAWINGS.

TEMPORARY CHAIN-LINK FENCE GENERAL NOTES

1. TEMPORARY CHAIN-LINK FENCE FABRIC, POSTS, RAILS, TIES, BANDS, BARS, RODS, AND OTHER FITTINGS AND HARDWARE SHALL CONFORM TO AASHTO M 181 FOR TYPES, GRADES AND CLASSES, AND AS NOTED BELOW.
2. POSTS:

	TERMINAL, CORNER AND GATE POSTS	LINE POSTS	TOP OR BRACE RAIL
	3 INCHES O.D. PIPE	2 1/2 INCH O.D. PIPE	1 1/8 INCH O.D. PIPE
AASHTO TYPE	I OR II	I OR II	I OR II
AASHTO GRADE	1 OR 2	1 OR 2	1 OR 2
MINIMUM LENGTH OF POST FOR			
8 FEET FABRIC	10 FEET-8 INCHES	10 FEET-8 INCHES	NA
ACTUAL OUTSIDE DIAMETER (IN.)	2.875	2.375	1.660
WALL THICKNESS (IN.)	GRADE 1 = .203 GRADE 2 = .160	GRADE 1 = .154 GRADE 2 = .120	GRADE 1 = .140 GRADE 2 = .111
3. FABRIC:

TYPE II AND TYPE IV SHALL BE 9 GAUGE CORE WIRE, 2 INCH MESH
TYPE IV FABRIC SHALL BE CLASS A OR B.
TYPE IV FABRIC SHALL BE GREY IN COLOR, AND SHALL MATCH FEDERAL STANDARD 595A, COLOR CHIP NO. 26493 (SEMI-GLOSS), UNLESS OTHERWISE SPECIFIED IN THE SPECIAL PROVISIONS.
4. THE DEPTH OF CONCRETE FOOTINGS IN SOLID ROCK MAY BE REDUCED TO ONE FOOT BELOW THE TOP OF ROCK AND THE DIAMETER OF THE HOLE IN ROCK MAY BE REDUCED TO 3/4 INCHES.
5. BRACE BANDS AND STRETCHER BAR BANDS SHALL BE FURNISHED WITH 3/16 INCH DIA. CARRIAGE BOLTS AND ELASTIC STOP NUTS.
6. RESTORATION OF FENCE FOOTINGS UPON REMOVAL SHALL BE COMPLETED BY PLACING 6-INCH LIFTS OF SAND WITH THE TOP 6-INCHES OF SURFACE COURSE COMPRISING OF TOPSOIL OR SUITABLE SUBSTRATE AND ASPHALT LAYER BASED ON FOOTING INSTALLATION LOCATION. ALTERNATIVE FOOTINGS FOR TEMPORARY CHAIN-LINK FENCING MAY BE ACCEPTED BY THE ENGINEER.



CONSTRUCTION PLANS

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF NATURAL & HISTORIC RESOURCES
OFFICE OF NATURAL RESOURCE RESTORATION

HIGBEE BEACH RESTORATION PROJECT
PHASE I
LOWER TOWNSHIP
COUNTY OF CAPE MAY

SOIL EROSION CONTROL NOTES AND DETAILS

DRAWN BY:	SK	APPROVALS			CONTRACT NO.	A82790
CHECKED BY:	MH	APPROVED BY:	TITLE	DATE	NJDEP PROJECT NO.	4299-20
SCALE:	AS SHOWN				SHEET 42 OF 139	
DATE:	APRIL 2021				DWG. NO. C404	

wsp WSP USA SOLUTIONS INC.
412 MOUNT KEMBLE AVENUE,
P.O. Box 1946
MORRISTOWN, NJ 07962-1946

Digitally signed
by Matthew D
Holthaus
Date: 2021.04.30
19:44:57-0400
N.J. PROFESSIONAL ENGINEER NO. 52884
CERTIFICATE OF AUTHORIZATION 246A27933700

PLOT TIME: 2021-07-02 09:48:06.06

PROJECT PATH: \\mnt-fs-01.us.lbgcorp.com\FPI\Operations\032\NJDEP\IRD Contract 82790\A82790 Projects\Higbee Beach\200 - Deliverables\Drawings\100% Design\Drawings\100% CONSTRUCTION

HIGBEE BEACH TIDAL MARSH RESTORATION PLANTING LIST

Planting Zone/Elevation (feet NAVD 1988)	Area (acres)	Species Name (Common Name)	Planting / Seeding Window	% of Plantings in Planting Zone	Height	Root	Spacing	Units	Quantity
Low Marsh Elevation 0 - 2.5	38.46	<i>Spartina alterniflora</i> (Smooth Cordgrass)	<i>April 1 - June 15</i>	100%	6 IN Minimum	2 IN x 2 IN Minimum Plug	3 FT. On Center	Each	186,147
High Marsh Elevation 2.5 - 3.5	11.54	<i>Distichlis spicata</i> (Spike Grass)	<i>April 1 - June 15</i>	35%	6 IN Minimum	2 IN x 2 IN Minimum Plug	2 FT. On Center	Each	43,985
		<i>Spartina patens</i> (Saltmeadow Hay)		35%				Each	43,985
		<i>Spartina cynosuroides</i> (Big Cordgrass)		10%				Each	12,568
		<i>Juncus gerardii</i> (Saltmeadow Rush)		20%				Each	25,135
Tidal Scrub-Shrub Elevation 3.0 - 4.0	0.74	<i>Baccharis halimifolia</i> (Eastern Baccharis)	<i>March 15 - May 15</i>	50%	24 IN - 30 IN Minimum	Container No. 2	5 FT. On Center	Each	645
		<i>Iva frutescens</i> (Marsh Elder)		50%				Each	645
				Coastal Successional Field Mix*	<i>March 15 - May 30</i>	100%	N/A	N/A	40 Lbs of PLS/AC
Total Wetland Area	50.74								
N/A = not applicable									

HIGBEE BEACH UPLAND HABITAT RESTORATION PLANTING LIST

Planting Zone/Elevation (feet NAVD 1988)	Area (acres)	Species Name (Common Name)	Planting / Seeding Window	% of Plantings in Planting Zone	Height	Root	Spacing	Units	Quantity
Upland Shrub (Low Elevation) Elevation 4.0 - Varies	0.54	<i>Ilex opaca</i> (American Holly)	March 15 - May 15	25%	24 IN - 36 IN Minimum	Container No. 2	15 FT. On Center	Each	26
		<i>Baccharis halimifolia</i> (Eastern Baccharis)		20%				Each	21
		<i>Myrica pensylvanica</i> (Bayberry)		15%				Each	16
		<i>Clethra alnifolia</i> (Sweet Pepper Bush)		15%				Each	16
		<i>Rhus typhina</i> (Staghorn Sumac)		25%				Each	26
		Coastal Successional Field Mix*	March 15 - May 30	100%	N/A	N/A	40 Lbs of PLS/AC	Pounds	22
Upland Shrub (High Elevation) Elevation 4.0 - Varies	0.79	<i>Morella cerifera</i> (Wax myrtle)	March 15 - May 15	35%	24 IN - 36 IN Minimum	Container No. 2	20 FT. On Center	Each	31
		<i>Ilex glabra</i> (Inkberry)		23%				Each	20
		<i>Myrica pensylvanica</i> (Bayberry)		18%				Each	16
		<i>Rhus copallinum</i> (Winged Sumac)		24%				Each	21
		Coastal Successional Field Mix*	March 15 - May 30	100%	N/A	N/A	40 Lbs of PLS/AC	Pounds	32
**Trail Concealment High Density Zone Elevation Varies	0.86	<i>Morella cerifera</i> (Wax myrtle)	March 15 - May 15	18%	24 IN - 36 IN Minimum	Container No. 2	5 FT. On Center	Each	273
		<i>Ilex opaca</i> (American Holly)		10%				Each	152
		<i>Ilex glabra</i> (Inkberry)		10%				Each	152
		<i>Baccharis halimifolia</i> (Eastern Baccharis)		15%				Each	227
		<i>Myrica pensylvanica</i> (Bayberry)		7%				Each	106
		<i>Clethra alnifolia</i> (Sweet Pepper Bush)		5%				Each	76
		<i>Rhus copallinum</i> (Winged Sumac)		10%				Each	152
		<i>Rhus glabra</i> (Smooth Sumac)		10%				Each	152
		<i>Rhus typhina</i> (Staghorn Sumac)		15%				Each	228
		Coastal Successional Field Mix*	March 15 - May 30	100%	N/A	N/A	40 Lbs of PLS/AC	Pounds	35
		Old Field/Early Successional Field Elevation Varies	10.97	Coastal Successional Field Mix*	March 15 - May 30	100%	N/A	N/A	40 Lbs of PLS/AC
Total Upland Area	13.16								
N/A = not applicable									

**14 SHRUBS FROM THE TRAIL CONCEALMENT HIGH DENSITY ZONE WILL BE PLANTED AT THE DIRECTION OF THE ENGINEER ALONG THE TRAIL AND RAMP LEADING TO THE VIEWING PLATFORM, AS SHOWN ON THE VIEWING PLATFORM PLAN VIEW, DRAWING NUMBER S104.



GENERAL PLANTING NOTES:

- ALL PLANT SUPPLIERS SHALL BE IDENTIFIED AND SUBMITTED WITHIN TWO WEEKS OF HAVING MOBILIZED TO THE PROJECT FOR CONFIRMATION OF PLANT MATERIAL AVAILABILITY AND SUBMITTED TO THE ENGINEER FOR APPROVAL. CONTRACT GROWS MAY BE REQUIRED FOR THE QUANTITY AND SPECIES OF PLANTS IDENTIFIED ON THE PROJECT PLANS.
- THE CONTRACTOR SHALL SUBMIT COPIES OF THE PLANT MATERIAL ORDER AT LEAST FOUR MONTHS PRIOR TO THE PROPOSED PLANTING DATE TO THE ENGINEER. ALL PROPOSED CHANGES TO THE PLANTING PLAN SHALL BE MADE IN WRITING TO THE ENGINEER AT LEAST FOUR MONTHS PRIOR TO PLANTING. ALL PROPOSED CHANGES MUST BE APPROVED IN WRITING. A COPY SHALL ALSO BE PROVIDED TO THE NJDEP.
- MINIMUM CONTAINER SIZE FOR SHRUBS AND TREES SHALL BE NO. 2.
- ALL PLANT STOCK WILL BE INSPECTED ON-SITE PRIOR TO INSTALLATION. PLANTING STOCK NOT MEETING SPECIFICATIONS WILL NOT BE PLANTED AND SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- THE HANDLING AND CARE OF ALL PLANT MATERIAL SHALL FOLLOW APPROPRIATE PROCEDURES TO PROTECT STEMS AND ROOT SYSTEMS FROM EXPOSURE TO FREEZING TEMPERATURES, EXCESSIVE HEAT, AND DESICCATION DUE TO SUN AND WIND. PLANT MATERIAL THAT IS NOT PROTECTED FROM THESE CONDITIONS SHALL BE REJECTED BY THE ENGINEER AND SHALL BE REPLACED BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE.
- ALL SEEDING WORK SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF TREES, SHRUBS AND HERBACEOUS PLANTS, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- REFER TO THE SPECIFICATIONS, SECTION 11:21, FOR SPECIFIC ONSITE STORAGE AND INSTALLATION REQUIREMENTS.
- THE PLANTING WINDOW FOR UPLAND CONTAINERIZED TREES AND SHRUBS IS FROM SEPTEMBER 15 TO NOVEMBER 15. THE PLANTING WINDOW FOR UPLAND HERBACEOUS PLANT MATERIAL IS FROM APRIL 1 TO MAY 15. THE INSTALLATION OF UPLAND TREES AND SHRUBS SHALL BE PERFORMED DURING THE FALL. THE INSTALLATION OF UPLAND HERBACEOUS PLANT MATERIAL SHALL BE PERFORMED DURING THE SPRING, AS DIRECTED BY THE ENGINEER. TIDAL PLUGS AND SHRUBS SHALL BE PLANTED IN ACCORDANCE WITH THE NOTES BELOW AND AT THE DIRECTION OF THE ENGINEER. SHOULD A SPRING ESTABLISHMENT PERIOD FOR CONTAINERIZED TREES AND SHRUBS BE REQUIRED TO MEET PLANTING REQUIREMENTS, THE PLANTING PERIOD SHALL BE FROM MARCH 15 TO MAY 15, AND SHALL ONLY BE APPROVED FOR SPRING PLANTING BY THE ENGINEER. NO PLANTING OR SEEDING SHALL OCCUR OUTSIDE OF THE SPECIFIED PLANTING WINDOWS UNLESS AUTHORIZED BY THE ENGINEER IN WRITING.
- PLANT MATERIAL SHALL BE INSTALLED IN A NATURALIZED PATTERN AT APPROPRIATE SPACING TO MEET PLANTING DENSITY AS SHOWN ON PLAN. PLANTS INSTALLED IN STRAIGHT LINES SHALL NOT BE ACCEPTED AND CORRECTED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL RE-INTRODUCE THE DIURNAL TIDE TO ALL TIDAL EMERGENT AND TIDAL SCRUB SHRUB PLANTING AREAS FOR A MINIMUM OF 5 CALENDAR DAYS PRIOR TO PERFORMING FINAL GRADE VERIFICATION OF TIDAL PLANTING AREAS FOR APPROVAL TO PLANT BY THE ENGINEER.

*COASTAL SUCCESSIONAL FIELD MIX

<i>Schizachyrium scoparium</i> (Little Bluestem)	3 lbs of PLS/ac
<i>Panicum amarum</i> (Coastal Panicgrass)	2.5 lbs of PLS/ac
<i>Sorghastrum nutans</i> (Indiangrass)	3 lbs of PLS/ac
<i>Danthonia spicata</i> (Poverty oatgrass)	1 lbs of PLS/ac
<i>Chamaecrista fasciculata</i> (Partridge pea)	2 lbs of PLS/ac
<i>Deschampsia flexuosa</i> (Wavy Hairgrass)	0.5 lbs of PLS/ac
<i>Lolium multiflorum</i> (Annual Rye)	5 lbs of PLS/ac
Perennial Wildflowers	23 lbs of PLS/ac

TIDAL WETLANDS PLANTING NOTES


EMERGENT PLANTINGS – PLUGS : LOW MARSH AND HIGH MARSH

- NO AREA SHALL BE PLANTED UNTIL FINAL GRADES HAVE BEEN ACHIEVED, IT HAS BEEN CLEARED OF DEBRIS AND APPROVED BY THE ENGINEER.
- THE LOW MARSH AND HIGH MARSH PLANTING WINDOW IS FROM APRIL 1 TO JUNE 15.
- THE PLUGS SHALL BE PLANTED IN THE SOIL NO MORE THAN ONE INCH (1”) DEEPER THAN GROWN IN THE NURSERY AND TO A DEPTH THAT WILL ENSURE THAT THE TOP OF THE ROOTSTOCK MASS LIES NO MORE THAN ONE INCH (1”) BELOW THE SOIL SURFACE. THE ENTIRE ROOT STOCK MASS SHALL BE IN CONTACT WITH SOIL SUCH THAT THERE ARE NO AIR OR WATER POCKETS PRESENT AROUND THE ROOTSTOCK.
- PRIOR TO PLACEMENT OF THE PLANT IN THE PLANTING HOLE, FERTILIZER SHALL BE PLACED IN THE BOTTOM OF THE PLANTING HOLE (OSMOCOTE 18–6–12) AT THE RATE OF THIRTY (30) GRAMS PER PLANT. THE PLANTS SHALL THEN BE PLACED WITH THE ROOT SYSTEM ORIENTED DOWNWARD. WHILE THE PLANT IS IN THIS POSITION, THE PLANTING HOLE SHALL BE FULLY AND FIRMLY CLOSED. IF A SOIL DEPRESSION IS FORMED ABOVE OR IMMEDIATELY ADJACENT TO THE PLANTING LOCATION, ENOUGH SOIL SHALL BE SLOUGHED FROM THE SURROUNDING AREA AND FIRMLY TAMPED INTO THE DEPRESSION TO LEAVE THE PLANTING AREA AT THE SAME ELEVATION AS THE SURROUNDING SOIL OR SLIGHTLY HIGHER.

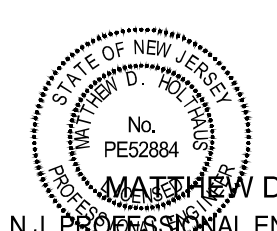
TIDAL SCRUB SHRUB PLANTINGS:

- THE PLANTING WINDOW IS MARCH 15 TO MAY 15.
- ALL SHRUBS SHALL CONFORM TO THE MATERIAL SPECIFICATION REQUIREMENTS OF THE AMERICAN STANDARD FOR NURSERY STOCK (1986 OR LATER EDITION). THE BACCHARIS AND IVA SHALL CONFORM TO TYPE 4 STOCK, TWO– TO THREE–FOOT (2’–3’) TALL, MINIMUM OF TWO CANES.
- PLANT PITS SHALL BE DUG APPROXIMATELY FOUR INCHES (4”) WIDER THAN THE STOCK SIZE. PRIOR TO PLACEMENT OF THE PLANT IN THE PLANTING HOLE, A 20–GRAM FERTILIZER AGRIFORM TABLET (20–10–5 ANALYSIS) SHALL BE PLACED IN THE BOTTOM OF THE PLANTING HOLE. BACKFILL SOIL MATERIALS SHALL BE THE SAME AS EXCAVATED FOR THE PLANTING PITS.


CONSTRUCTION PLANS



WSP USA SOLUTIONS INC.
412 MOUNT KEMBLE AVENUE,
P.O. Box 1946
MORRISTOWN, NJ 07962-1946



Digitally signed
by Matthew D
Holthaus
Date:
2021.04.02
19:49:13 -0400
N.J. PROFESSIONAL ENGINEER LIC. NO. 52884
CERTIFICATE OF AUTHORIZATION 24642793700

APPROVED BY: 

DATE: 7/1/21

DESCRIPTION: ADDITIONAL PLANTING REQUIREMENT

REV. DATE: 7/1/21

BY: AV

APPR. MH

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF NATURAL & HISTORIC RESOURCES
OFFICE OF NATURAL RESOURCE RESTORATION

HIGBEE BEACH RESTORATION PROJECT
PHASE I
LOWER TOWNSHIP
COUNTY OF CAPE MAY

PLANTING NOTES AND DETAILS

DRAWN BY: SK

CHECKED BY: MH

SCALE: AS SHOWN

DATE: APRIL 2021

APPROVALS

APPROVED BY: TITLE DATE

CONTRACT NO. A82790

NJDEP PROJECT NO. 4299–20

SHEET 1100F 139

DWG. NO. L201

**HIGBEE BEACH RESTORATION
ADDENDUM NO. 2
REVISED SPECIFICATION PAGES (16)**

11:21 ITEM NO. 21 – UPLAND AND MARSH PLANTINGS CON'T:

(F) Low Marsh and High Marsh: Plugs shall be in accordance with ANSI Z60.1 - 2014. Plants shall have a well-developed root system and shall be furnished in trays.

~~Peat-pot~~Plug size shall be in accordance with ANSI Z60.1 - 2014. ~~Plugs~~
~~peats in~~ trays shall be grown over a duration of time for new fibrous roots
to have developed and for the root mass to retain its shape and hold
together when removed from the trays and containers. The trays shall be
sufficiently rigid to hold the root mass shape and protect the root mass
during shipping. Plants shall be grown in 2" x 2" ~~peat-potplugs~~ long
enough for the root system to be developed well enough through the sides
and bottom of the ~~peats-container~~ to prevent removal of the plant when
submerged in water. Plants that can be removed from the ~~peats-tray~~ by
holding the stem growth and gently pulling on the ~~pot-tray~~ are to be
rejected.

(G) Trees and Shrubs: Deciduous trees and shrubs shall be symmetrically developed and of uniform habit of growth, with straight boles or stems, and free from objectionable disfigurements.

Evergreen trees shall have well developed symmetrical tops with typical spread of branches for each particular species or variety.

(H) Plant size: Minimum sizes measured after pruning and with branches in normal position shall conform to measurements indicated on the Project Plans, based on the average width or height of the plant for the species as specified in ANSI Z60.1 - 2014. Undersized stock or material not conforming to the Specifications shall be rejected by the Engineer at the time of delivery, prior to installation, and shall be replaced by the Contractor at the Contractor's expense. Plants larger in size than specified may be provided with approval of the Engineer. When larger plants are provided, increase the ball of earth or spread of roots in accordance with ANSI Z60.1 - 2014.

(I) Root Ball Size: All bare root and container grown root balls shall conform to ANSI Z60.1 - 2014. All wrappings and ties shall be biodegradable. Root growth in container grown plants shall be sufficient to hold earth intact when removed from containers. Root bound drawings should not be accepted.

(J) Growth of Trunk and Crown:

(1) Deciduous Shrubs: Deciduous shrubs shall have the height and number of primary stems recommended by ANSI Z60.1 - 2014. Acceptable plant material shall be well shaped, with sufficient well-spaced side branches, and recognized by the trade as typical for the species grown in the region of the Project.

11:21 ITEM NO. 21 – UPLAND AND MARSH PLANTINGS CON'T:

(K) Marsh Fertilizer:

(1) Low Marsh and High Marsh Plant Fertilizer: Fertilizer for Low and High Marsh Plants shall be granules of dry plant nutrients encapsulated within multiple layers of polymeric resin designed to provide a 6-month controlled release of nutrients and contain the following minimum percentages, by weight, of plant food nutrients:

- 18% available nitrogen
- 6% available phosphorus
- 12% available potassium

(2) Tree and Shrub Fertilizer: Fertilizer for trees and shrubs shall be dry, granular fertilizer containing a blend of spores of arbuscular mycorrhizal (AM) fungi and ectomycorrhizal fungi (EcM), beneficial rhizosphere bacteria, 4-7-4 fertilizer, organic amendments, and the following minimum percentages, by weight, of plant food nutrients:

- 4% available nitrogen
- 7% available phosphorus
- 4% available potassium

(L) Water: Water shall be freshwater that is free from toxic substances and chemicals that may be injurious to plant growth. Water, hoses and other watering equipment required to transport, and place water as required on the planting area shall be paid for and as directed under Item No. 22 – Upland Plantings Watering. Watering procedures are to be approved by the Engineer. All water used prior to plant installation as described herein is to be incidental to this item.

(M) Pine Straw Mulch: Pine straw mulch shall be composed of whole pine needles and pine needle fragments. Pine straw shall be fresh, dry and bright in color. Pine straw shall be free of weeds, twigs, pinecones and insects. All selected material for use as pine straw mulch shall be free of seeds of invasive plant species, and is subject to approval by the Engineer.

CONSTRUCTION

Submittals

The following shall be submitted:

(A) Preconstruction Submittals:

(1) Plant Material List: Submit a final plant materials list to the Engineer 2 months prior to commencement of planting operations. The list shall follow planting tables as shown on the Project Plans.

(2) Estimated Planting Schedule: Submit 45 days prior to commencement of planting operations.

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(3) Quality Control Record: When planting operations are complete, the Contractor shall submit a quality control record. The quality control record shall include the following:

~~(1) Proper plant material identification. Verification should ensure that each item of plant material is permanently identified as required herein.~~

(21) Number, location, depth and orientation of planted material should confirm to the requirements herein.

(32) Spacing between planted material shall conform to the requirements herein and on the Project Plans.

(43) Physical integrity of planted material (conform to planting guarantee specification).

(54) Accessibility for inspection and maintenance.

(65) Proper watering if applicable. This should conform with the requirements herein.

(4) Contractor Qualification: The Contractor must provide evidence of similar experience on similar projects and note reputation and work history for the specified types of services required.

(B) Product Data: Submit data sheets and catalog cuts 15 calendar days prior to starting work. The data sheets shall show that materials meet the requirements specified herein. Data sheets shall include the following:

(1) Marsh fertilizer: Form, chemical analysis and composition percent.

(2) Tree and Shrub fertilizer: Form, chemical analysis and composition percent.

(3) Delivery Schedule: Submit a delivery schedule to the Engineer at least 15 calendar days prior to the

(4) Equipment: Submit a list of equipment to be used for the planting operation 15 days prior to starting work.

(5) Finished Grade: Finished grade shall not be considered for tidal planting areas until a minimum of 5-calendar days after the tide has been restored to the planting area. At least 24 hours prior to the commencement of the planting operation, the Contractor shall submit verification that finished grades are as indicated on the Project Plans and that all debris, including *Phragmites* wrack, has been removed from the planting areas. The Engineer shall review and, if satisfactory, approve this submittal and grade verification prior to commencement of planting operations. If the Engineer determines that some elements are not satisfactory, the

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Contractor will be directed by the Engineer to complete corrective actions prior to commencement of planting operations. Survey work required for this are to be included for and paid under Item No. 3 – Construction Layout, Interim and As-Built Surveys.

(C) Test Reports:

(1) Equipment Calibration: Within 1 week of testing, submit a certification of calibration tests conducted on the equipment used during the planting operations.

(2) Soils Test: ~~Eight~~ Composite samples ~~developed from eight grab samples~~ taken to a depth of eight inches ~~for each planting habitat zone. Final from eight locations selected of grab samples shall be approved~~ by the Engineer. ~~Composite samples~~ shall be submitted to a State agricultural laboratory (such as Rutgers Soil Testing Laboratory <http://www.rcrc.rutgers.edu/soiltestinglab/>) or commercial laboratory for soluble salts and pH testing. Submit certified reports of laboratory tests, prepared by an independent soil testing laboratory, including analysis and interpretation of test results. Each report shall be properly identified by the Contractor. Test methods used and compliance with recognized test standards are to be described.

(D) Certificates:

(1) Two-Year Plant Guarantee: Submit a signed two-year plant guarantee within 15 calendar days prior to Completion of Construction. The two-year plant guarantee shall meet the standards as detailed herein.

(E) Closeout Submittals:

(1) As-Planted Plan: The Contractor shall submit two copies of an as-planted plan to the Engineer, within two weeks following completion of ~~final~~ planting operations ~~and prior to the submission of the Notice of Completion to the Department~~. Unless directed differently by the Engineer, these drawings shall be drawn to a scale of 1 inch = 50 feet and show ~~the~~ as-built ~~habitat zoned planting locations for the plant material used based on final grade. Habitat zones shall be broken down by season (spring/fall) and year installed and mimic the presentation of habitat zones shown on the Project Plans. Each breakdown of habitat zones shall~~ ~~A list of the quantities via individual table of each species installed in each of the planting blocks or areas are also habitat zones to be submitted with the drawings.~~ Any deviations from the original planting plans, including approved substitutions, are to be clearly marked and documented. Survey work required for this are to be included for and paid under Item No. 3 – Construction Layout, Interim and As-Built Surveys.

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Delivery, Storage & Handling

(A) Delivery Schedule: A delivery schedule is to be submitted to the Engineer specifying the necessary dates and approximate times of all deliveries of planting materials. To prevent damage or drying out of plants, it is suggested that delivery of plant material be staged to match not more than weekly installation rates.

(B) Plant Transport: All transport/shipping/handling methods and materials shall be performed according to best nursery and horticultural practices and are subject to approval by the Engineer. If directed by the Engineer, a description of the transport materials, packing procedures and shipping methods are to be provided. If determined deficient by the Engineer, the shipping materials, procedures and shipping shall be modified to an acceptable standard, as solely determined by the Engineer. Each shipping container shall be clearly labeled as to species, quantity, lift date and packing date. For plant material from out of state sources (non-local source), transit time from the plant source/nursery to the Project site or designated delivery point shall be direct and not exceed 72 hours for dormant material or 24 hours for non-dormant material, or as approved by the Engineer.

Non-local plants shall be scheduled for shipping so that the plants arrive at the Project or designated delivery location no earlier than 24 hours prior to the anticipated planting date for those specific plants. With the permission of the Engineer, the period of onsite storage may be extended if the Contractor can demonstrate to the Engineer's satisfaction the ability to store the materials onsite without damaging the viability of the plant materials. However, it is the sole responsibility of the Contractor to ensure that the plants are properly stored.

Plant material from sources within New Jersey (local source) shall be transported daily from the nursery to the Project and only in quantities to meet that days estimated planting needs.

(C) Plant Inspection: The Engineer shall inspect all plants upon delivery and determine if they meet the requirements of the paragraphs "Plants" and "Quality Assurance". Any plants not meeting these requirements shall be rejected. Unauthorized substitutions shall also be rejected.

The Engineer shall coordinate with the Contractor regarding all plant inspections at the nursery and allow the Contractor to accompany the Engineer.

The Contractor is responsible for plant survival under the provisions of the "Two-Year Plant Guarantee". Therefore, the Contractor may reject plant

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material that is delivered to the site if it does not meet the standards specified herein or for any other reason. However, if plant material is rejected, the Contractor must provide the Engineer with a written list of specific reasons for rejection.

The Contractor shall be responsible for all certificates of inspection of plants that may be required by federal, state or other authorities to accompany each shipment of plants and on arrival; a copy of the certificate(s) shall be supplied to the Engineer. The Contractor shall be responsible for all certificates of inspection of other plant materials (e.g. fertilizer) that may be required by federal, state or other authorities to accompany each shipment and on arrival; the certificate(s) shall be on file with the Engineer.

(D) Storage: All areas used for temporary storage of plants must be enclosed with perimeter herbivory fence to prevent grazing by waterfowl. Temporary herbivory fence for storage of plants shall be considered incidental to the planting requirements, and no separate payment shall be made for the installation and removal of the temporary herbivory fence.

Storage of other material shall be in designated areas as directed by the Engineer.

(1) Plant Storage and Protection: Plants delivered to the site must be installed within 14 calendar days of delivery. Plants shall be installed into the ground on a "first to be delivered-first to be installed" basis to reduce timing stored onsite. must not be stored onsite for more than 48 hours before planting. Plants stored onsite for more than 14 calendar days for more than 48 hours shall be rejected and replaced at no additional cost to the Department. The Contractor is expected to maintain the onsite storage (nursery) of plants 7 days a week and ensure storage requirements are being met. Store and protect plants not planted on the day of arrival at the site as follows:

(a) Shade and protect plants in outside storage areas from the wind and direct sunlight until planted.

(b) Keep shrubs and trees in a moist condition until planted by watering with a fine mist spray.

(c) Do not store plant material directly on concrete or bituminous surfaces.

(d) Prior to planting, all onsite low marsh and high marsh plantings shall be stored within a marsh area protected from herbivory pressures. The plants within the marsh storage areas must receive the twice-daily tidal inundation as well as proper drainage.

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(e) It is the sole responsibility of the Contractor to ensure that the plants are properly stored.

(f) The Engineer will perform a final inspection of plants stored onsite on the day they are being installed by the Contractor and prior to installation. Should any plant deemed to be more than 25% dead or in an unhealthy condition, as solely determined by the Engineer, on the day of installation, the Contractor shall replace the plant at no additional cost to the Department.

(E) Handling: The Contractor shall be responsible for off-loading the plants from the delivery vehicles. Do not drop or dump plants or shipping containers from vehicles. Avoid damaging plants being moved from nursery or storage areas to the planting site. Handle container plants carefully to avoid damaging or breaking the earth ball or root structure. Do not handle plants by the trunk or stem. Remove damaged plants from the site.

Unless directed by the Engineer, all plants shall be handled, culled and sorted in a shaded location. If insufficient natural shade exists, shade shall be erected by the Contractor using tarps or other materials approved by the Engineer. If directed by the Engineer, thermal- reflective tarps shall be used to cover the plant materials.

If wind speeds exceed ten (10) miles per hour, a wind barrier shall be erected immediately adjacent to the stockpiling area. Whenever appropriate, the wind barrier shall be re-located or re-positioned to protect the quality of the stock. The wind barrier shall be constructed utilizing tightly woven or coated tarps, or as approved by the Engineer. The materials and methods used in the construction of the wind barrier shall be subject to approval by the Engineer. With the approval of the Engineer, the Contractor may elect to utilize the transport vehicle as a temporary storage area, subject to the above restrictions and guidelines, including the placement of thermal-reflective tarps. The construction of wind barriers or shade or the use of thermal-reflective tarps shall be incidental to this item and no additional compensation to the Contractor shall be made by the Department.

(F) Watering: If planting is delayed for more than 6 hours after delivery, the Contractor shall take measures, approved by the Engineer, to keep roots moist. After installation, low marsh and high marsh plants shall be watered naturally by diurnal tides.

(G) Time Limitation: Except for container-grown plant material, the time limitation from lifting or digging plants at the nursery to installing plant material at the Project shall be a maximum of 90 days.

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Time Restrictions and Planting Conditions

(A) Planting Dates:

LOW MARSH AND HIGH MARSH PLANTS

Spring Season April 1 to June 15

TIDAL SHRUBS

Spring Season March 15 to May 15

UPLAND HERBACIOUS PLANTS

Spring Season April 1 to May 15

UPLAND TREES/SHRUBS

Spring Season March 15 to May 15

Fall Season September 15 to November 15

An estimated planting schedule shall be submitted to the Engineer specifying the planned dates for planting items.

(B) Restrictions: Planting operations shall be performed only during periods when beneficial results can be obtained. When drought, excessive moisture, frozen ground, temperatures above 80 degrees Fahrenheit or below 34 degrees Fahrenheit or other unsatisfactory conditions prevail, the work shall be stopped as directed by the Engineer. When special conditions warrant a variance to the planting operations, proposed planting times and a plan to protect plants from weather extremes shall be submitted by the Contractor for approval by the Engineer.

(C) Timing: Seeding operations in the applicable zones shall be completed prior to the commencement of any planting operations in those zones.

Planting shall not occur when the marsh surface is inundated. As a guide to determining high and low water predictions, see "Tidal Tables, current addition, East Coast of North and South America, Including Greenland," as published by U.S. Department of Commerce, National Oceanic and Atmospheric Administration.

Methods of Construction

Preparation

(1) Planting Substrates: Planting substrates shall be free from debris, noxious weeds, *Phragmites* wrack, toxic substances or other materials harmful to plant growth.

Prior to commencement of planting operations, the Contractor shall complete a Soils Test in accordance with ASTM D 5268 and ASTM D 4972

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to determine the pH, organic matter, soluble salt, and nutrient contents, as well as soil texture, of the planting substrates. Eight\$ separate sample collections to a depth of 8-inches shall occur for each planting area in coordination with the Engineer to develop a total of 8 composite samples for testing, and be random over the separate areas.

(2) Equipment Calibration: Immediately prior to the commencement of planting operations, calibration tests shall be conducted on the equipment to be used. These tests shall confirm that the equipment is operating within the manufacturer's specifications and will meet the specified criteria. The equipment shall **be calibrated a minimum of once every day during the operation.**

(3) Obstructions Below Ground: When obstructions below finished grades prevent planting operations, the Contractor shall submit a plan showing proposed adjustments to location, type of plant, and/or planting method to the Engineer. Adjustments will be made at no cost to the Department.

Methods of Construction - Herbaceous Vegetation

(A) Plan Review: If the Contractor or landscape Sub-Contractor possesses a record of successful herbaceous wetland plantings that have received final approval from the Department, comments concerning the appropriateness of the various wetland plantings, composition of the planting blocks, stock size, planting techniques and anti-herbivory measures are welcomed and encouraged. These comments and suggestions shall be submitted to the Owner and Division within 60 days of the Notice to Proceed. The Owner and Division may elect to reject some or all comments.

(B) Layout: Prior to planting, the Contractor shall stake all of the planting areas. A layout stake shall be placed at 50-foot intervals (minimum) along the perimeter of the planting areas and at each corner of each planting area, or as directed by the Engineer. The stakes shall be numbered or coded indicating the appropriate areas and species to be planted. The stakes shall be driven firmly into the soil a minimum of 12 inches.

(C) Setting Plants: If more than one species shall be planted per planting area, the individual species shall be planted in randomly mixed patterns within each area to the maximum extent practicable, as solely determined by the Engineer. Subdividing mixed planting areas and then planting as monocultures shall be strictly prohibited. Deeper planting shall be allowed with the approval of the Engineer. All stock shall be planted upright. All planting procedures, tools and methods are subject to approval by the Engineer. Team planting by several persons each performing different tasks is encouraged.

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Plants shall not be installed in water greater than six inches deep without approval of the Engineer.

(1) ~~Peat Pots,~~ **Tubelings and Plugs:** The individual ~~peat pots and~~ plugs shall be planted in the soil at least 1 inch deeper than grown in the nursery, or source location, and to a depth that shall ensure that the top of the bulb, corm, tuber or rhizome and the attached root mass lies at least 1 inch below the soil surface. The maximum planting depth shall be 2 inches deeper than grown in the nursery.

In order to place the plants at the appropriate depth in the soil, the soil surface shall be opened with a tile spade or other appropriate hand or power tool. If peat-potted stock is utilized, an auger shall be used to develop the planting hole. The depth of auger placement shall allow for easy plant placement at the specified depth while limiting the formation of air pockets beneath the planting hole. Prior to planting, each side of the peat pot is to be split with a razor to facilitate growth of the stock.

The plant(s) shall be placed at the appropriate depth with the root system oriented downward. While the plant is in this position, the soil profile or section shall be fully and firmly closed with an appropriate hand tool. Once the soil is closed, firm foot pressure is to be applied over buried stock or in several positions immediately adjacent to exposed plantings to ensure good soil and plant contact, and to remove any air and/or water pockets and voids. If a soil depression is formed above or immediately adjacent to the planting location, enough soil shall be sloughed from the surrounding area and firmly tamped into the depression to leave the planting area at the same elevation as the surrounding soil.

If pint, quart or gallon container stock is utilized, a hole of sufficient width and depth shall be excavated to allow easy placement of the plant at a depth 1 to 2 inches deeper in the soil than grown in the nursery or source location. Prior to the placement of the plant in the planting hole, a 20-gram fertilizer tablet or two 10-gram tablets shall be placed along the side of the planting hole have contact with the root system and soil. If the root system of container stock is container-bound, the root system shall be carefully freed and any container-bound or cramped roots shall be separated and spread out when placing the plant so that the roots can grow without further constriction of the root mass. The planting hole shall then be backfilled with the excavated soil and tamped firmly to remove all air/water pockets and voids. If a soil depression is formed above or immediately adjacent to the planting location, enough soil shall be sloughed from the surrounding area and firmly tamped into the depression to leave the planting area at the same elevation as the surrounding soil.

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(3) Create a firm soil mound at the bottom of the planting hole.

(4) Remove the tree from the container and tease apart the root system, repositioning any girdling or potentially girdling roots.

(5) Spread roots over soil mound so that root flare is at finished grade and the tree is straight.

(6) Backfill the planting hole with excavated soil. Push soil against the planted tree with the tip of the shovel or hand.

(7) Next, apply firm foot pressure immediately adjacent to the tree. This is done to compact the soil, ensure proper planting, and eliminate air/water pockets. Firm foot pressure shall be applied in several different positions immediately adjacent to the seedling/sapling. If directed by the Engineer, the placement of firm foot pressure shall occur while maintaining a gentle hold of the tree, thus promoting vertical placement of the tree. Do not step on, bruise, or walk through the tree, or cause the tree to lean. Check for tightness by pulling gently on the tip of the tree.

(H) Fertilization:

Fertilizer shall follow the material requirements described herein. Immediately after opening the planting hole, a measured dose of fertilizer shall be placed into the bottom of the planting hole prior to the placement of the plant. The fertilizer rate shall conform to the information provided on the Project Plans.

(I) Maritime Forest Organic Mulch Amendment:

Prior to seeding and planting of the maritime forest areas, the top 8 inches of the sand substrate within the entire planting area shall be amended with organic mulch to attain an organic content of 2% to 3%. The organic mulch shall be evenly blended into the upper 8 inches of the sand layer such that an even distribution free of clumps or clods is obtained. This is in addition to the 12-inch diameter of organic mulch incorporation required around each planting hole.

(J) Pine Straw Mulch:

The material for use as pine straw mulch shall be subject to approval by the Engineer. Pine straw mulch shall be placed within a stockpile prior to application within maritime forest. If approved by the Engineer, the material may be placed immediately after tree/shrub planting has been approved by the Engineer. Upon acceptance of the tree/shrub planting, the Contractor shall place a 3-inch layer of pine straw in a 24-inch radius diameter around each planted tree or shrub within the maritime forest planting area, as indicated on the Project Plans. The placement of the pine straw mulch shall be subject to the approval of the Engineer.

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QUALITY CONTROL RECORD

When all planting operations are complete, the Contractor shall submit a Quality Control Record, which should include at a minimum:

1. Inspection/Rejection of Plant Material;
2. Results of all soil testing and resulting soil amendment activities;
3. All replacements or substitutions of plant materials;
4. Record of watering and mulching activities; and
5. Record of herbivory measures.

RESTORATION AND CLEAN UP

When planting operations have been completed, the Contractor shall restore any damaged areas to their original conditions. Planting work areas shall also be cleaned up, including the removal of any excess materials. The Contractor shall remove damaged, excess, and waste materials from the Project and dispose of the materials offsite in an approved manner satisfactory to the Engineer.

PROTECTION OF INSTALLED AREAS

Immediately upon completion of the planting operations in an area, the area shall be protected against traffic or other use by erecting barricades and/or providing signage as directed by the Engineer.

WARRANTY AND MAINTENANCE DURING CONSTRUCTION

Installed plants shall be warrantied and maintained in a healthy growing condition, as detailed herein, until Completion of Construction. Maintenance of planting areas during construction shall include preventing the intrusion of weeds, turf grass, and other undesired vegetation, watering, and adjusting grades for settling. The Contractor shall maintain planting areas free of *Phragmites* wrack, litter, and debris. Grass, weeds, and other undesired vegetation shall be removed before reaching a maximum height of 3 inches including the root system. The Contractor shall maintain planting areas in a condition free of litter, debris or accumulated vegetative debris (wrack) of sufficient size or quantity to potentially adversely impact plant growth.

When settling occurs, additional backfill soil (utilizing wet excavation, unclassified material) shall be added to the plant pit until the backfill level is equal to the surrounding grade. Serious settling that changes the setting of the plant in relation to the maximum depth at which it was grown requires replanting in accordance with procedures detailed herein.

Any plants washed out, dislodged or missing shall be replanted on a daily basis at no additional cost to the Department. Any planted areas disturbed prior to Completion of Construction, as determined by the Engineer, shall be repaired or reinstalled in accordance with the procedures detailed

11:21 ITEM NO. 21 – UPLAND AND MARSH PLANTINGS CON'T:

herein. Any plant deemed to be more than 25% dead or in an unhealthy condition, as deemed by the Engineer, shall be replaced prior to Completion of Construction at no cost to the Department. At the Completion of Construction and prior to entering the two-year plant guarantee, all plantings shall exhibit 100% survivability in a healthy growing condition, as determined by the Engineer. All labor, materials, equipment, and incidentals necessary to complete any replanting work shall be at no additional cost to the Department.

TWO-YEAR PLANT GUARANTEE

(A) The Contractor shall submit to the Engineer, a written and signed two-year plant guarantee, which is conditional of 90% survival of the planted Contract quantity as detailed on the Project Plans. Planting areas, or portions thereof, for which 90% survival is not reached at the end of two full growing seasons shall be replanted during the appropriate planting season for the planting area, to achieve a minimum of 90% survival of the planted Contract quantity for each planting area. Mortality shall be considered for any plant deemed to be more than 25% dead or in an unhealthy condition, as solely determined by the Engineer. The two-year plant guarantee period shall commence on the date of Completion of Construction and shall end 730 calendar days later.

Following are the terms and conditions of the two-year plant guarantee:

- (1)** Plants shall meet the requirements listed in paragraph "Materials".
- (2)** Planting operations shall be carried out as stipulated herein.

Under the terms and conditions of the two-year plant guarantee, the Contractor is solely responsible for plant survival. Losses attributed to herbivores, disease, eutrophication, inappropriate hydrological regimes, drought, wind, wave energies or ice scouring shall not lower the minimum survival or coverage requirements.

At the end of the two-year plant guarantee, the Engineer shall make a determination as to whether the plants planted in the planting areas meet the conditions of the guarantee. Any planting areas or portions thereof not meeting the requirements of the guarantee shall be replanted in accordance with paragraph "Re-planting".

(B) Execution: Any vegetation within preserved areas damaged by the work under this section, as determined by the Engineer, shall be replaced immediately after the completion of the work at no additional cost to the Department.

11:00 (204) TECHNICAL SPECIFICATIONS:

11:22 ITEM NO. 22 – UPLAND PLANTINGS WATERING CON'T:

PROCEDURE

For all areas within the Project limits that are planted with upland trees and shrubs, watering is to be applied once per week (once every 5 days) for 183 days from April 15 - October 15, or as directed by the Engineer. Water is to be applied at a rate of 5 gallons per square yard (5 gal/sy). The first watering shall be accomplished at a rate of 10 gallons per square yard (10 gal/sy). The Contractor is only required to apply water during the first growing season. Additionally, if the Contractor can provide documentation (via rain gauges or other rainfall recording devices) that the project site received in excess of 2-inches of rainfall within a consecutive 48-hour duration during the 5-day period, the Engineer may dismiss the watering event required for that 5-day period.

Water shall be delivered to the site in watertight tanks or tank trucks equipped with a pump and distributor bar or hose and nozzle, capable of distributing the water throughout the entire area to be watered. The Contractor may also propose to install an irrigation system in lieu of the use of watering trucks, at no additional cost to the Department. Water shall be applied uniformly and in such a manner that washing or eroding of the soil or sand surface does not occur. All equipment shall be operated, so that no damage occurs to any part of the work. Should any damage occur, it shall be promptly repaired at the expense of the Contractor to the satisfaction of the Engineer. The Contractor may, if permitted by authorities having jurisdiction, obtain water from freshwater streams or rivers. The Contractor may also obtain water from hydrants, if permitted to do so by the local authorities having jurisdiction.

Contractor shall submit a watering plan and schedule prior to commencing watering operations.

11:23 ITEM NO. 23 – INVASIVE TREATMENT - SPRAYING:

This item shall consist of the work of treating invasive vegetation and includes all labor, equipment, materials and accessories required for spraying a herbicide application on *Phragmites* in select locations, in accordance with these Specifications and at the direction of the Engineer.

Select locations dominated by *Phragmites* within the Limit of Disturbance and above the normal tide range will be targeted with an herbicide treatment during construction to help with the reduction of invasive vegetation. The Engineer shall provide a map for target areas to the Contractor during construction. The Contractor should assume treatment may occur anywhere within the Limit of Disturbance.

11:23 ITEM NO. 23 – INVASIVE TREATMENT – SPRAYING CON'T:

Should a major spill of herbicide occur, the Contractor shall immediately contact the Division and the Engineer and take all actions to neutralize damage to the environment.

No herbicide may be disposed of on or off the Project except with strict compliance of the manufacturer's label and NJDEP regulations. The Contractor shall remove and properly dispose of all contaminated containers, gloves, protective gear and the like. The applicator may not clean out any equipment on or near the Project. All herbicides and application equipment shall be kept safe and securely locked during the period of work to prevent injury to unauthorized persons.

The applicator(s) is(are) solely responsible for all matters of safety, efficacy, notification, reporting and compliance with all applicable laws and regulations.

Water must be clean, fresh water from municipal sources and not taken from sources with suspended sediments.

The selected herbicide and the timing of application shall be approved by the Engineer. The herbicide applicator shall be a NJDEP certified pesticide applicator. In planning the use of herbicides to control invasive species, the Contractor and applicator shall ensure that herbicides used are labeled for the target species through the pesticide label or through the unlabeled pest process. Consult herbicide labels for the appropriate application rate for the target species being treated.

Unless otherwise directed by the Engineer, the application of herbicide shall be conducted in the late summer or fall and no later than Oct 1. Herbicide shall be applied by hand-sprayer, back-pack, wick application, or mechanical spray equipment. Low ground pressure equipment may be used to access the treatment areas with the approval of the Engineer. The herbicide shall not be applied during unfavorable weather conditions, as winds can increase the chance for herbicide to drift. Additionally, herbicide shall not be applied if rain is expected within four hours of treatment. All efforts will be made to avoid overspray or drift onto non-target species.

Site preparation for herbicide application shall include cutting dormant stalks and actively growing plants ~~4-6~~ to ~~6-8~~ weeks prior to the treatment. Herbicide application shall occur with a surfactant in the late summer or fall when sugars are being translocated to the plant's root system. Plants are beginning to increase their uptake of carbohydrates and amino acids in their roots during this period and will also accumulate herbicides. Herbicide application shall be scheduled so that the application is complete prior to the first occurrence of heavy frost. The Contractor shall be responsible for

11:23 ITEM NO. 23 – INVASIVE TREATMENT – SPRAYING CON'T:

herbicide application permits. The Project NJDEP Land Use permit covers vegetation management, including *Phragmites* treatment within the wetland.

EQUIPMENT AND CLEANING

The Contractor shall furnish equipment suitable for the methods and procedures specified herein. Hand-held, back-pack or mechanical power spray equipment may be used. The type of equipment will be approved by the Engineer. Equipment will be tested for calibration (rate of application) and be clean, sound and free of leakage.

Equipment used in areas containing invasive plant species shall be power-washed (1000 psi minimum) and cleaned with clean water (without using cleaning soaps or chemicals) before leaving the invasive spraying area to prevent the spread of seeds, roots, or other viable plant parts. Water may be supplied by a municipal water source or may be pumped from an on-site or local surface water source. If water is drawn from a local water source, to protect aquatic life, there shall not be any loss of water elevation at the site of withdrawal or immediately downstream of the site. Withdrawal from surface waters may be subject to federal, state and other regulations.

Equipment cleaning stations shall include a portable commercial cleaning station with a rack or other proposed measures from the Contractor approved by the Engineer. Loose plant and soil material that has been removed from clothing, boots and equipment, or generated from cleaning operations, including constructed cleaning station material after use, shall be placed and properly covered with two or more feet of soil within the onsite debris reuse area

NO PLANTING MAY BE DONE IN AREAS OF SPRAYING WITHIN 30 DAYS OF THE LAST HERBICIDE TREATMENT UNLESS OTHERWISE DIRECTED BY ENGINEER.

11:24 ITEM NO. 24 – PERFORMANCE/PAYMENT/MAINTENANCE BONDING AND INSURANCE:

This section describes the requirements for furnishing a performance, payment, and maintenance bond as well as insurance requirements.

A performance, payment, and maintenance bond shall be required for the faithful performance of the Contract, for payment of all labor and materials, and for the guarantee and maintenance of the work. The bonds shall be duly executed by the Contractor, as principal, and by a surety company

HIGBEE BEACH RESTORATION
ADDENDUM NO. 2
SPECIFICATION REVISION REGISTER

HIGBEE BEACH RESTORATION PROJECT
MAY 20, 2021 SPECIFICATION REVISIONS REGISTER

ADDENDUM #	SPEC SECTION #	SPEC PAGE	SPEC TITLE	REVISION / CHANGE / COMMENT
Clarification 1	3:03	S-10	Qualification of Bidders	Modified the requirements for contractor qualifications
Clarification 1	Appendix A		Appendix A	Provided updated forms: Ownership Disclosure Form, Disclosure of Investment Activities in Iran Form, and Source Disclosure Form to replace the outdated version of each in the original bid documents
Addendum 1	Table of Contents		Table of Contents	Updated page numbers and added items pertaining to corresponding revisions.
Addendum 1	1:04	D16	Work Description	Made Sub-Item No. 12.9A "If and Where Directed"
Addendum 1	1:04	D18	Work Description	Added Sub-Item No. 13.1A - Dynamic Compaction Operation - If and Where Directed
Addendum 1	1:16	D41	Permit Conditions	Added NJDEP Stormwater Permit (5G3)
Addendum 1	11:01	T2	Item No. 1 - General Work	Removed Notation 10 regarding the Materials Field Laboratory
Addendum 1	11:03	T7 - T8	Item No. 3 - Construction Layout, Interim and As-Built Surveys	Updated the AutoCAD versions
Addendum 1	11:11	T25	Item No. 11 - Excavation	Updated incorrect Sub-Item reference from 12.9 to 12.10
Addendum 1	11:12	T52	Item No. 12 - Fill Material	Updated per sub-item 12.9A being "If and Where Directed"
Addendum 1	11:13	T79 - T81	Sub-Item No. 13.1A - Dynamic Compaction Operation - If and Where Directed	New Sub-Item & shifted specification sheets
Addendum 1	11:21	T200	Item No. 21 - Upland and Marsh Plantings	Revised Two-Year Plant Guarantee language
Addendum 1	11:31	T235	11:31 Measurement and Payment	Revised Payment for Sub-Item No. 19A to "If and Where Directed"
Addendum 1	11:31	T238 - T239	11:31 Measurement and Payment; Payment for Item No. 13 - Earthen Berm System	Added Sub-Item No. 13.1A - Dynamic Compaction Operation - If and Where Directed, & shifted subsequent specifications
Addendum 1	11:31	T242 - T243	Measurement and Payment - Payment for Item No. 19 - Coastal Successional Field Mix and Payment for Item No. 21 - Upland and Marsh Plantings	Revised language regarding payment
Addendum 1	11:31	T250 - T254	Measurement and Payment - Various Planting Sub-Items	Revised language regarding payment
Addendum 1	Proposal	P1 - P25	Various	Updated IV. Disadvantaged Business Enterprise Certification, Sub Item 12.9A to "If and Where Directed", added Sub-Item No. 13.1A, updated reference on page P-19. <u>Please use this version of the proposal for Bid Submission</u>
Addendum 2	11:21	T188 - T197	Item No. 21 - Upland and Marsh Plantings	Revised Pea pot to plugs, revised language regarding planting, storage, soils, submittals
Addendum 2	11:21	T200 - T202	Item No. 21 - Upland and Marsh Plantings	Clarified Maritime Forest Organic Mulch regarding directions per plans. Revised pine straw mulch radius/diameter. Revised language related to plant mortality.
Addendum 2	11:21	T204	Item No. 22 - Upland Plantings Watering and Item No. 23 - Invasive Species Treatment	Modified language regarding plant watering and certain rain events. Added language regarding invasive species treatment.
Addendum 2	11:21	T207 - T-208	Item No. 23 - Invasive Species Treatment	Revised language regarding invasive species treatment.